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Support Levels

Improvision support levels are as follows:

Full	Recommended for use with Volocity.
Deprecated	Has worked with Volocity in the past, but is no longer recommended by PerkinElmer.
In Development	Support for this device is being added to Volocity.
Not Supported	Will not work with Volocity.

ASI

MS-2000 Stage Controller

Description		XYZ stage controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	None Required	No driver is required
	Intel	Full	4.0.0	10.4.x	None Required	
Windows	XP Pro	Full	3.5	SP3	None Required	
	XP x64	Full	3.5	SP2	None Required	
	Windows 7 Pro 32 bit	Full	5.3		None Required	
	Windows 7 Pro 64 bit	Full	5.3		None Required	

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover female-to-male DB-9 type.

On the controller, switch 4 should be up and switch 5 should be down, setting it to 19200 baud.

PZ-2000 XY Stage with Piezo Z

Description		Motorised XY stage with piezo Z top plate				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	None Required	No driver is required
	Intel	Full	4.0.0	10.4.x	None Required	
Windows	XP Pro	Full	3.5	SP3	None Required	
	XP x64	Full	3.5	SP2	None Required	
	Windows 7 Pro 32 bit	Full	5.3		None Required	
	Windows 7 Pro 64 bit	Full	5.3		None Required	

An ASI MS-2000 XYZ stage controller is required to drive this stage.

PZM-2000 Piezo Z for Manual Stages

Description		Piezo Z top plate for manual stages				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	None required	No driver is required
	Intel	Full	4.0.0	10.4.x	None required	
Windows	XP Pro	Full	3.5	SP3	None required	
	XP x64	Full	3.5	SP2	None required	
	Windows 7 Pro 32 bit	Full	5.3		None required	
	Windows 7 Pro 64 bit	Full	5.3		None required	

An ASI MS-2000 XYZ stage controller is required to drive this stage. The PZM-2000 requires modification of the original microscope stage and is only available for selected microscopes.

See the following link for more details:

http://www.asiimaging.com/pz-2000.html

EasySync

UC232R-10 USB to Serial Adaptor

Description		USB to serial adaptor				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.0	10.3.9	2.1.10	http://www.ftdichip.com/Drivers/VCP.htm
	Intel	Full	4.0.0	10.4.x	2.2.10	
Windows	XP Pro	Full	3.0.0	SP3	2.04.16	
	XP x64	Full	3.5.0	SP2	2.04.16	
	Windows 7 Pro 32 bit	Full	5.3		2.06.00	
	Windows 7 Pro 64 bit	Full	5.3		2.06.00	

A free USB port is required for each serial adaptor. Multiple serial adaptors can be used on the same system.

Hamamatsu

C10600 (Orca R2)

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.4	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.4	10.4.7	Dec 08	
Windows	XP Pro	Full	4.4	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an IEEE 1394b (FireWire 800) port. A spare IEEE 1394b port is required for connection. If a spare port is not available, an IEEE 1394b PCIe card can be added to most systems, we recommend the use of the card supplied by Hamamatsu. See Appendix B for more detailed information on IEEE 1394b.

C11440-10C (ORCA-Flash 2.8)

Description		Scientific CMOS Camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not Supported				http://www.dcamapi.com/
	Intel	Not Supported				
Windows	XP Pro	Full	5.5	SP3	Nov 10	
	XP x64	Full	5.5	SP2	Nov 10	
	Windows 7 Pro 32 bit	Full	5.5		Nov 10	
	Windows 7 Pro 64 bit	Full	5.5		Nov 10	

This camera connects to the computer via an included Dalsa Xcelera-CL PX4 Dual Camera link frame grabber card. This card requires a free PCIe slot.

C11440-22CU (ORCA-Flash 4.0)

Description		Scientific CMOS Camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not Supported				http://www.dcamapi.com/
	Intel	Not Supported				
Windows	XP Pro	Full	6.2	SP3	Nov 12	
	XP x64	Full	6.2	SP2	Nov 12	
	Windows 7 Pro 32 bit	Full	6.2		Nov 12	
	Windows 7 Pro 64 bit	Full	6.2		Nov 12	

Only the Camera Link version of this camera is supported in Volocity.

C11440-22CU (ORCA-Flash 4.0 V2)

Description		Scientific CMOS Camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not Supported				http://www.dcamapi.com/
	Intel	Not Supported				
Windows	XP Pro	Full	6.3	SP3	April 13	
	XP x64	Full	6.3	SP2	April 13	
	Windows 7 Pro 32 bit	Full	6.3		April 13	
	Windows 7 Pro 64 bit	Full	6.3		April 13	

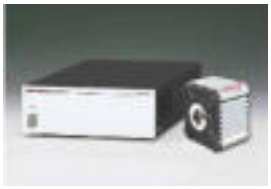
Only the Camera Link version of this camera is supported in Volocity. The camera firmware revision must be 2.5 or higher.

C4742-80-AG (Orca ERG Deep Cooling)

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	4.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

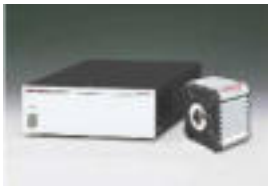
C4742-95-12ERG (Orca ERG)



Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	4.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

C4742-95-12G04 (Orca 285 FireWire)



Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	4.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

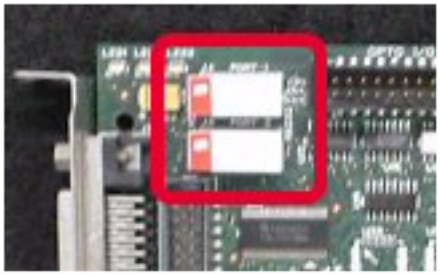
This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

C7780 Camera (3-chip Orca)

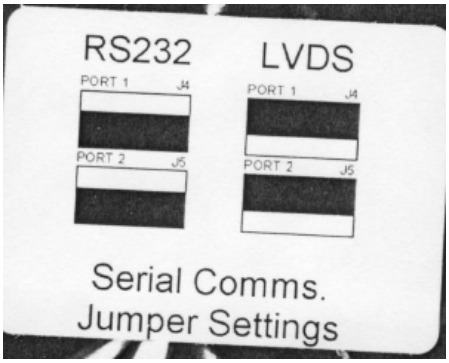
Description		Digital color video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	4.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an included Active Silicon Phoenix AS-PHX-D36-PCI64 PCI-X card or an AS-PHX-D36-PE1 PCI express card. Only the PCI express card is compatible with 64 bit versions of Windows. See Appendix A for detailed information on PCI card compatibility.

The Phoenix card must be configured for LVDS serial communications. This is done using a jumper on the card:



Newer Phoenix cards may have a different style of jumper block:



The camera firmware must be 1.3D or higher.

Use with a Windows computer currently requires a separate serial cable. The serial cable must be connected to COM1 on the computer.

C9100-02

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	4.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an included Active Silicon Phoenix CameraLink Card. Phoenix CameraLink cards are available as PCI, PCI-X or PCIe formats, and require a free relevant slot. Only PCIe Phoenix cards (AS-PHX-D24CL-PE1 and AS-PHX-D48CL-PE1) are compatible with 64 bit versions of Windows. See Appendix A for detailed information on PCI card compatibility.

AS-PHX-D24CL-PE1 cards may need to be fitted in slot 1 on some Dell computers to function correctly.

C9100-12

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	4.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an included Active Silicon Phoenix CameraLink Card. Phoenix CameraLink cards are available as PCI, PCI-X or PCIe formats, and require a free relevant slot. Only PCIe Phoenix cards (AS-PHX-D24CL-PE1 or AS-PHX-D48CL-PE1) are compatible with 64 bit versions of Windows. See Appendix A for detailed information on PCI card compatibility.

AS-PHX-D24CL-PE1 cards may need to be fitted in slot 1 on some Dell computers to function correctly.

C9100-13

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	5.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	5.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an included Active Silicon Phoenix CameraLink Card. Phoenix CameraLink cards are available as PCI, PCI-X or PCIe formats, and require a free relevant slot. Only PCIe Phoenix cards (AS-PHX-D24CL-PE1 or AS-PHX-D48CL-PE1) are compatible with 64 bit versions of Windows. See Appendix A for detailed information on PCI card compatibility.

AS-PHX-D24CL-PE1 cards may need to be fitted in slot 1 on some Dell computers to function correctly.

Dip switches should be set as follows for air cooling:

1	2	3	4
Down	Down	Up	Down

Dip switches should be set as follows for water cooling:

1	2	3	4
Down	Down	Up	Up

The following features of this camera are supported:

- Exposure
- Binning
- Gain
- Sensitivity
- Scan Speed
- Temperature adjustment
- Fan control

- Water cooling
- EMCCD / CCD mode switching
- Photon counting
- Background subtraction
- Shading correction

Note that the spot noise reduction and recursive averaging features of this camera may not be suitable for fluorescence microscopy. For more information about this, see technical note 447.

C9100-14

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.0.0	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	5.0.0	10.4.7	Dec 08	
Windows	XP Pro	Full	5.0.0	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an included Active Silicon Phoenix CameraLink Card. Phoenix CameraLink cards are available as PCI, PCI-X or PCIe formats, and require a free relevant slot. Only PCIe Phoenix cards (AS-PHX-D24CL-PE1 or AS-PHX-D48CL-PE1) are compatible with 64 bit versions of Windows. See Appendix A for detailed information on PCI card compatibility.

AS-PHX-D24CL-PE1 cards may need to be fitted in slot 1 on some Dell computers to function correctly.

Dip switches should be set as follows for air cooling:

1	2	3	4
Down	Down	Up	Down

Dip switches should be set as follows for water cooling:

1	2	3	4
Down	Down	Up	Up

The following features of this camera are supported:

- Exposure
- Binning
- Gain
- Sensitivity
- Scan Speed
- Temperature adjustment
- Fan control
- Water cooling
- EMCCD / CCD mode switching
- Photon counting

- Background subtraction
- Shading correction

Note that the spot noise reduction and recursive averaging features of this camera may not be suitable for fluorescence microscopy. For more information about this, see technical note 447

C9100-23B (ImagEM X2)

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not Supported				http://www.dcamapi.com/
	Intel	Not Supported				
Windows	XP Pro	Full	6.3	SP3	June 13	
	XP x64	Full	6.3	SP2	June 13	
	Windows 7 Pro 32 bit	Full	6.3		June 13	
	Windows 7 Pro 64 bit	Full	6.3		June 13	

This camera connects to the computer via an IEEE 1394b (FireWire 800) port. A spare IEEE 1394b port is required for connection. If a spare port is not available, an IEEE 1394b PCIe card can be added to most systems, we recommend the use of the card supplied by Hamamatsu. See Appendix B for more detailed information on IEEE 1394b.

The camera firmware revision must be 1.00.00.A or higher.

Dip switches should be set as follows for air cooling:

1	2	3	4
Up	Up	Up	Up

Dip switches should be set as follows for water cooling:

1	2	3	4
Up	Up	Up	Down

Dip switches should be set as follows for enabling mechanical shutter:

1	2	3	4
Up	Down	Up	Up

Dip switches should be set as follows for disabling mechanical shutter:

1	2	3	4
Up	Up	Up	Up

The following features of this camera are supported:

- Exposure
- Binning
- Gain (only supported in conventional CCD mode)
- Sensitivity
- Scan Speed
- Temperature adjustment
- Fan control
- Water cooling
- EMCCD / CCD mode switching
- EM gain protection-warn mode
- Photon counting
- Background subtraction
- Shading correction
- Mechanical shutter control

Note that the spot noise reduction and recursive averaging features of this camera may not be suitable for fluorescence microscopy. For more information about this, see technical note 447.

Note that the full EM gain protection mode is not available with Volocity 6.3 and camera firmware revision 1.00.00.A. This is a limitation of the camera firmware.

C9100-50

Description		Digital monochrome video camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.3	10.4.7	Dec 08	http://www.dcamapi.com/
	Intel	Full	4.3	10.4.7	Dec 08	
Windows	XP Pro	Full	4.3	SP3	March 09	
	XP x64	Full	5.04	SP2	March 09	
	Windows 7 Pro 32 bit	Full	5.3		Dec 09	
	Windows 7 Pro 64 bit	Full	5.3		Dec 09	

This camera connects to the computer via an included Active Silicon Phoenix CameraLink Card. Phoenix CameraLink cards are available as PCI, PCI-X or PCIe formats, and require a free relevant slot. Only PCIe Phoenix cards (AS-PHX-D24CL-PE1 or AS-PHX-D48CL-PE1) are compatible with 64 bit versions of Windows. See Appendix A for detailed information on PCI card compatibility.

Improvision

Acquisition Hub

Description		Shutter, piezo, Optigrid and channel changer controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.3	10.5.8	No drivers required	http://cellularimaging.perkinelmer.com/downloads/
	Intel	Full	5.3	10.5.8	No drivers required	
Windows	XP Pro	Full	5.3	SP3	UltraVIEW ProSync 2 Drivers 2.8	
	XP x64	Full	5.3	SP2	UltraVIEW ProSync 2 Drivers 2.8	
	Windows 7 Pro 32 bit	Full	5.3		UltraVIEW ProSync 2 Drivers 2.8	
	Windows 7 Pro 64 bit	Full	5.3		UltraVIEW ProSync 2 Drivers 2.8	

This is a USB-based controller for piezo focus drives, Optigrid and 4 TTL outputs for Macintosh or Windows computers.

A free USB port is required to connect the controller to the host computer.

Improvision Shutter Hub

Description		4 channel shutter controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	5.04	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

The Shutter Hub can drive up to four Uniblitz-compatible 32 mm, 25 mm or 6 mm shutters. An Improvision Acquisition Hub is required to drive the Shutter Hub.

Micro-Shutter for EXFO X-cite

Description		High speed shutter				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.5.8	No drivers required	No drivers required
	Intel	Full	4.0	10.5.8	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	3.6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

This is a modified EXFO X-cite collimating adaptor that includes a built-in high-speed shutter.

Any shutter driver that is compatible with a 6 mm “Uniblitz” shutter can drive the Micro-Shutter. This includes the Improvision Shutter Hub.

ORBIT 1

Description		Focus, filter, shutter and XY stage controller.				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.3	10.5.8	No drivers required	No drivers required
	Intel	Full	5.3	10.5.8	No drivers required	
Windows	XP Pro	Full	5.3	SP3	No drivers required	
	XP x64	Full	5.3	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

The ORBIT 1 is a microscope automation controller. Volocity supports the following devices:

- ORBIT 1 filter wheels
- ORBIT 1 focus drives
- ORBIT 1 shutters
- ORBIT 1 XY Stage

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be Improvision's own cable. Cables are available for both Macintosh-style (mini-DIN) and PC-style (DB9) connectors.

Keyspan

4 Port Serial Adaptor

Description		USB to 4 port serial adaptor.				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Deprecated*	3.5	10.3.9 to 10.4.9		http://www.tripplite.com/en/lp/keyspan/index.cfm
	Intel	Deprecated*	4.0	10.4.7		
Windows	XP Pro	Full	3.0	SP3	3.7	
	XP x64	Not Supported				
	Windows 7 Pro 32 bit	Not Supported				
	Windows 7 Pro 64 bit	Not Supported				

*Support is deprecated as drivers are not available for 10.5.x or later.

Leica Microsystems

DM5000B Electronic Microscope

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret (5 and 8 position)
- Encoded nosepiece
- Contrast modes

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

If no serial port is present on the microscope, you should connect the microscope to your computer via a USB cable and install the virtual com port driver which is available from the manufacturer.

DM5500B Electronic Microscope

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.3	10.3.9	No drivers required	No drivers required
	Intel	Full	5.3	10.4.7	No drivers required	
Windows	XP Pro	Full	5.3	SP3	No drivers required	
	XP x64	Full	5.3	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret (5 and 8 position)
- Encoded nosepiece
- Contrast modes

Features may vary between microscope models.

The microscope connects to the computer via a USB cable and a “Virtual Com Port” (VCM). The VCM driver can be downloaded from the following URL:

http://www.ftdichip.com/Drivers/VCP.htm

DM6000B Electronic Microscope

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive
- Contrast modes
- X-Y stage (built-in stage only, stages with additional external control units are not supported).

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

If no serial port is present on the microscope, you should connect the microscope to your computer via a USB cable and install the virtual com port driver which is available from the manufacturer.

DMI6000B Electronic Microscope

Description		Electronic inverted microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.5	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive
- Contrast modes
- Adaptive Focus Control (AFC)

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket). If no serial port is present on the microscope, you should connect the microscope to your computer via a USB cable and install the virtual com port driver which is available from the manufacturer.

DMIRBE Electronic Microscope

Description		Electronic inverted microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	4.0	SP3	No drivers required	
	XP x64	Full	4.0	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive

Features may vary between microscope models.

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

DMIRE2 Electronic Microscope

Description		Electronic inverted microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

DMRXA2 Electronic Microscope

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

DMSTC X-Y Stage

Description		Electronic XY Stage				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	3.6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

The controller should be connected to its own serial port.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

Ludl

MAC2000 Controller

Description		Filter wheel / Shutter / XY controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported				No drivers required
	Intel	Not supported				
Windows	XP Pro	Full	3.7	SP3	No drivers required	
	XP x64	Full	3.7	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

The controller should be connected to its own serial port.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. The switches in the controller must be set correctly for the controller to work properly. Improvision Technical Note 409 describes how to do this.

The correct settings are 9600 baud, odd parity, 1 stop bit.

MAC2002 Controller

Description		Filter wheel / Shutter / XY controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported				No drivers required
	Intel	Not supported				
Windows	XP Pro	Full	3.7	SP3	No drivers required	
	XP x64	Full	3.7	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

The controller should be connected to its own serial port.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. The switches in the controller must be set correctly for the controller to work properly. Improvision Technical Note 409 describes how to do this.

The correct settings are 9600 baud, odd parity, 1 stop bit.

MAC5000 Controller

Description		Filter wheel / Shutter / XYZ controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.5	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

On Windows, a serial cable is required to connect the controller to a serial port on the computer. The cable must be the manufacturer's own cable.

Volocity will detect the baud rate of the controller as long it is set to one of the following:

- 9600 baud, no parity, 2 stop bits (factory default)
- 9600 baud, odd parity, 1 stop bit (Openlab default)
- 19200 baud, no parity, 2 stop bits (best performance)

The baud rate is controlled using switches in the MAC5000 controller. See the MAC5000 manual for more information.

It may take several minutes for the controller to be recognised by the computer the first time it is used. This is because Volocity will try different port settings until it finds one that works. Allow 5 minutes for this to happen.

On the Macintosh, a USB cable is required to connect the controller to a USB port on the computer. A standard USB "A to B" type cable can be used.

MAC6000 Controller

Description		Filter wheel / Shutter / XYZ controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.0.3	10.4.7	No drivers required	No drivers required
	Intel	Full	5.0.3	10.4.7	No drivers required	
Windows	XP Pro	Full	5.0.3	SP3	No drivers required	
	XP x64	Full	5.0.3	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

On Windows, a serial cable is required to connect the controller to a serial port on the computer. The cable must be the manufacturer's own cable.

On the Macintosh, a USB cable is required to connect the controller to a USB port on the computer. A standard USB "A to B" type cable can be used.

MAC5000 995068 4 Channel Shutter Controller

Description		Shutter controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	3.6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

On Windows, a serial cable is required to connect the controller to a serial port on the computer. The cable must be the manufacturer's own cable.

Volocity will detect the baud rate of the controller as long it is set to one of the following:

- 9600 baud, no parity, 2 stop bits (factory default)
- 9600 baud, odd parity, 1 stop bit
- 19200 baud, no parity, 2 stop bits (best performance)

The baud rate is controlled using switches in the MAC5000 controller. See the MAC5000 manual for more information.

It may take several minutes for the controller to be recognised by the computer the first time it is used. This is because Volocity will try different port settings until it finds one that works. Allow 5 minutes for this to happen.

On the Macintosh, a USB cable is required to connect the controller to a USB port on the computer. A standard USB "A to B" type cable can be used.

99A360 DC Filter Wheel (10 position)

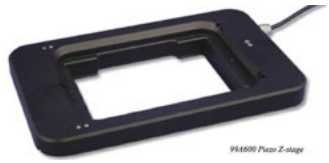
Description		10 position high-speed filter wheel				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Requires MAC5000 or MAC6000controller with a DC filter wheel driver module.

Requires MAC5000 firmware version 5.1, filter module version 2.9 or higher.

Volocity supports up to 5 filter/shutter controller modules with up to 2 wheels per module.

99A600 Piezo Z-stage controller for LEP inverted stage



Description		Piezo Z-stage insert for LEP inverted stage				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.7	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.7	SP3	No drivers required	
	XP x64	Full	3.7	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Requires a MAC5000 or MAC6000 controller with a Piezo control module.

The axis ID needs to be changed to “Z” from the factory default setting of “B”. Please follow the instructions in your Ludl manual.

BioPrecision X-Y Stage

Description		XY Stage				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.5	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Requires MAC5000 or MAC6000controller with appropriate axis driver modules.

For correct operation, the XY stage step size must be set in the “Device” preferences. The stage must be calibrated each time Volocity is restarted or the MAC5000 controller is switched off.

DC or stepper filter wheels (6 position)

Description		6 position filter wheel				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Requires MAC5000 or MAC6000 controller. Not all controllers support all wheels – refer to Ludl for more information.

Stepper wheels require a stepper controller. DC servo wheels require a DC servo controller.

Volocity supports up to 5 filter/shutter controller modules with up to 2 wheels per module.

Focus Drive

Description		External focus drive for non-automated microscopes				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.5	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Requires MAC5000 or MAC6000 controller with appropriate axis driver modules. The focus drive must be configured as axis “B” (this is the factory default).

For correct operation, the focus drive step size must be set in the “Device” preferences.

Shutter (25mm or 32mm)

Description		Shutter				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.5	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Requires MAC5000 or MAC6000controller with appropriate filter / shutter module.

Volocity supports up to 5 filter/shutter controller modules with up to 3 shutters per module.

For correct operation, it may be necessary to set a shutter delay in the “Device” preferences.

Measurement Computing

USB-1208LS

Description		USB bus-powered DAQ module				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.3	10.5.8	No drivers required	No drivers required
	Intel	Full	5.3	10.5.8	No drivers required	
Windows	XP Pro	Full	5.3	SP3	No drivers required	
	XP x64	Full	5.3	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

Supported features include:

- 8 Digital TTL inputs
- 8 Digital TTL outputs
- Two 10 bit analog outputs
- One 32-bit external event counter
- 8 single-ended 11-bit ADC inputs

Nikon

90i Electronic Microscope

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported			Drivers are not available	http://www.nikon-instruments.jp/eng/service/download/DLList.aspx?CID=3
	Intel	Not supported			Drivers are not available	
Windows	XP Pro	Full	3.5	SP3	iSeriesTools available from Nikon	
	XP x64	Full	5.2	SP2	iSeriesTools available from Nikon	
	Windows 7 Pro 32 bit	Not Supported			Drivers are not available	
	Windows 7 Pro 64 bit	Not Supported			Drivers are not available	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive
- Control of light path (between ocular lenses and camera port)
- Motorized analyzer

Features may vary between microscope models.

This microscope requires a free USB port on the host computer.

90i Digital head

Description		Digital head used on 80i microscope body.				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported			Drivers are not available	http://www.nikon-instruments.jp/eng/service/download/DLList.aspx?CID=3
	Intel	Not supported			Drivers are not available	
Windows	XP Pro	Full	3.5	SP3	iSeriesTools available from Nikon	
	XP x64	Full	5.2	SP2	iSeriesTools available from Nikon	
	Windows 7 Pro 32 bit	Not Supported			Drivers are not available	
	Windows 7 Pro 64 bit	Not Supported			Drivers are not available	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive

Features may vary between microscope models.

This microscope requires a free USB port on the host computer.

E1000 Electronic Microscope

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	No drivers Required	No drivers Required
	Intel	Full	4.0	10.4.7	No drivers Required	
Windows	XP Pro	Full	4.0	SP3	No drivers Required	
	XP x64	Full	4.0	SP2	No drivers Required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers Required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers Required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

Eclipse T*i*-E

Description		Electronic inverted microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported			Drivers are not available	http://www.nikon-instruments.jp/eng/service/download/DLList.aspx?CID=3
	Intel	Not supported			Drivers are not available	
Windows	XP Pro	Full	4.4	SP3	iSeriesTools available from Nikon	
	XP x64	Full	5.2	SP2	iSeriesTools available from Nikon	
	Windows 7 Pro 32 bit	Full			iSeriesTools available from Nikon	
	Windows 7 Pro 64 bit	Full			iSeriesTools available from Nikon	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive
- Control of light path (between ocular lenses and camera port)

Features may vary between microscope models.

This microscope requires a free USB port on the host computer. Firmware revision 3.10 or later is required.

Shutter Control Unit for TIRF System for TE2000

Description		3 channel shutter controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.7	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.7	SP3	No drivers required	
	XP x64	Full	3.7	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

The controller should be connected to its own serial port.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

TE2000 Electronic Microscope

Description		Electronic inverted microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.2	10.4.7	No drivers required	
Windows	XP Pro	Full	4.2	SP3	No drivers required	
	XP x64	Full	4.2	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive
- Motorized analyzer
- Perfect focus system

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

Olympus

BX61 Electronic Microscope

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive
- Filter 1
- Filter 2
- Filter 3

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a straight-connected female-to-female type.

All the switches on switch block 2 of the UCB control unit should be switched off. This sets the microscope to 19200 baud, 8 bits, even parity, 2 stop bits, CR+LF termination.

IX81 Electronic Microscope

Description		Electronic Inverted Microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Objective nosepiece
- Focus drive
- Filter wheel
- TL shutter (shutter 2)
- Disc scanning confocal unit (DSU)
- Zero drift microscope system (ZDC)

Features may vary between microscope models.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a straight-connected female-to-female type.

All the switches on switch block 2 of the UCB control unit should be switched off. This sets the microscope to 19200 baud, 8 bits, even parity, 2 stop bits, CR+LF termination.

IX83 Electronic Microscope

Description		Electronic Inverted Microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported			Drivers are not available	These drivers are available on request. Please contact technical support or Olympus directly.
	Intel	Not supported			Drivers are not available	
Windows	XP Pro	Full	6.3	SP3	1394 Bus Host Controller 2.1.6.1 and Microscope I/F 2.1.8.11	
	XP x64	Full	6.3	SP2	1394 Bus Host Controller 2.1.6.1 and Microscope I/F 2.1.8.11	
	Windows 7 Pro 32 bit	Full	6.3		1394 Bus Host Controller 2.1.6.1 and Microscope I/F 2.1.8.11	
	Windows 7 Pro 64 bit	Full	6.3		1394 Bus Host Controller 2.1.6.1 and Microscope I/F 2.1.8.11	

Supported electronic features include:

- Objective nosepiece
- Fluorescence filter turret 1
- Fluorescence shutter 1
- Fluorescence filter turret 2
- Fluorescence shutter 2
- TL shutter
- TL LED

- TL Lamp
- Condenser
- Polarizer
- Focus drive
- Zero drift microscope system (ZDC3)

Features may vary between microscope models.

This microscope connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

The IX3-BSW firmware must be 01.01.03 or higher.

PerkinElmer

UltraView LCI

Description		High speed confocal imaging system				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.0.3	10.4.7	No drivers required	http://www.cellularimaging.com/downloads/
	Intel	Full	5.0.3	10.4.7	No drivers required	
Windows	XP Pro	Full	5.0.3	SP3	Improvision Hardware Drivers 2.2	
	XP x64	Full	5.0.3	SP2	Improvision Hardware Drivers 2.2	
	Windows 7 Pro 32 bit	Full	5.2		Improvision Hardware Drivers 2.4	
	Windows 7 Pro 64 bit	Full	5.2		Improvision Hardware Drivers 2.4	

Systems with a NEOS AOTF or a Modular laser system upgrade will require a PerkinElmer ProSync 2 box. All other systems will require an Improvision acquisition hub.

UltraView RS

Description		High speed confocal imaging system				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.4	10.3.9	No drivers required	http://www.cellularimaging.com/downloads/
	Intel	Full	4.4	10.4.7	No drivers required	
Windows	XP Pro	Full	4.4	SP3	Improvision Hardware Drivers 2.2	
	XP x64	Full	5.0.3	SP2	Improvision Hardware Drivers 2.2	
	Windows 7 Pro 32 bit	Full	5.2		Improvision Hardware Drivers 2.4	
	Windows 7 Pro 64 bit	Full	5.2		Improvision Hardware Drivers 2.4	

UltraView ERS

Description		High speed confocal imaging system				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.4	10.3.9	No drivers required	http://www.cellularimaging.com/downloads/
	Intel	Full	4.4	10.4.7	No drivers required	
Windows	XP Pro	Full	4.4	SP3	Improvision Hardware Drivers 2.2	
	XP x64	Full	5.0.3	SP2	Improvision Hardware Drivers 2.2	
	Windows 7 Pro 32 bit	Full	5.2		Improvision Hardware Drivers 2.4	
	Windows 7 Pro 64 bit	Full	5.2		Improvision Hardware Drivers 2.4	

UltraView VoX

Description		High speed confocal imaging system				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.4	10.3.9	No drivers required	http://www.cellularimaging.com/downloads/
	Intel	Full	4.4	10.4.7	No drivers required	
Windows	XP Pro	Full	4.4	SP3	Improvision Hardware Drivers 2.2	
	XP x64	Full	5.0.3	SP2	Improvision Hardware Drivers 2.2	
	Windows 7 Pro 32 bit	Full	5.2		Improvision Hardware Drivers 2.4	
	Windows 7 Pro 64 bit	Full	5.2		Improvision Hardware Drivers 2.4	

Photometrics

Cascade:512B and 512F

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6	10.3.9	PVCAM 2.7.0 or higher	http://www.photomet.com/
	Intel	Not supported				
Windows	XP Pro	Full	3.6	SP3	PVCAM 2.6.9.3 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Full	5.2		PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via a PCI card. The universal (3.3 V) version of the card will be required for the G5 Mac and PC workstations with 3.3 V PCI or PCI-X slots. See Appendix A for detailed information on PCI card compatibility.

The performance of PVCAM on the Mac is currently restricted due to a driver limitation – the frame rate achieved will be approximately half the expected rate. Photometrics intend to fix this in a future driver release.

The Cascade:512 cannot reach saturation without some EM gain – auto-exposure will fail in Volocity if saturation cannot be reached.

No binning at 6x6. Only 2x2 or 4x4.

This camera has dual readout ports giving a total of 4 speeds. On the Mac, switching to Alternate Readout does not work - this seems to be a PVCAM driver bug.

On Windows, run RSConfig.exe before running Volocity for the first time.

Cascade:650

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6	10.3.9	PVCAM 2.7.0 or higher	http://www.photomet.com/
	Intel	Not supported				
Windows	XP Pro	Full	3.6	SP3	PVCAM 2.6.9.3 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Full	5.2		PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via a PCI card. The universal (3.3 V) version of the card will be required for the G5 Mac and PC workstations with 3.3 V PCI or PCI-X slots. See Appendix A for detailed information on PCI card compatibility.

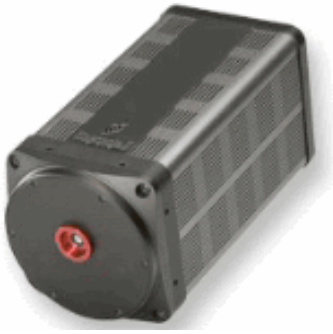
The performance of PVCAM on the Mac is currently restricted due to a driver limitation – the frame rate achieved will be approximately half the expected rate. Photometrics intend to fix this in a future driver release.

The Cascade:650 cannot reach saturation without some EM gain – auto-exposure will fail in Volocity if saturation cannot be reached.

The Cascade:650 does not support binning, however PVCAM does not have a method for Volocity to discover this. If binning is used, this camera will not output an image.

On Windows, run RSConfig.exe before running Volocity for the first time.

Cascade II-1024



Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported				http://www.photomet.com/
	Intel	Not supported				
Windows	XP Pro	Full	5.0.3	SP3	PVCAM 2.7.7 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Full	5.2		PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via a PCI card. The universal (3.3 V) version of the card will be required for workstations with 3.3 V PCI or PCI-X slots. See Appendix A for detailed information on PCI card compatibility.

Run RSConfig.exe before running Volocity for the first time.

CoolSNAP cf

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6	10.3.9	PVCAM 2.7.0 or higher	http://www.photomet.com/
	Intel	Not supported				
Windows	XP Pro	Full	3.6	SP3	PVCAM 2.6.9.3 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Full	5.2		PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via a PCI card. The universal (3.3 V) version of the card will be required for the G5 Mac and PC workstations with 3.3 V PCI or PCI-X slots. See Appendix A for detailed information on PCI card compatibility.

The performance of PVCAM on the Mac is currently restricted due to a driver limitation – the frame rate achieved will be approximately half the expected rate. Photometrics intend to fix this in a future driver release.

On Windows, run RSConfig.exe before running Volocity for the first time.

CoolSNAP cf Color

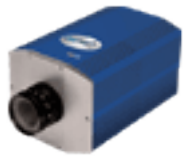
Description		Digital color camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6	10.3.9	PVCAM 2.7.0 or higher	http://www.photomet.com/
	Intel	Not supported				
Windows	XP Pro	Full	3.6	SP3	PVCAM 2.6.9.3 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Full	5.2		PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via a PCI card. The universal (3.3 V) version of the card will be required for the G5 Mac and PC workstations with 3.3 V PCI or PCI-X slots. See Appendix A for detailed information on PCI card compatibility.

The performance of PVCAM on the Mac is currently restricted due to a driver limitation – the frame rate achieved will be approximately half the expected rate. Photometrics intend to fix this in a future driver release.

On Windows, run RSConfig.exe before running Volocity for the first time.

CoolSNAP HQ2



Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.7	10.3.9	PVCAM 2.7.0 or higher	http://www.photomet.com/
	Intel	Not supported				
Windows	XP Pro	Full	3.7	SP3	PVCAM 2.6.9.3 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Not supported	5.2		PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via a proprietary PCI card. The universal (3.3 V) version of the card will be required for the G5 Mac and PC workstations with 3.3 V PCI or PCI-X slots. The IEEE 1394 (Firewire) version of this camera is not supported. See Appendix A for detailed information on PCI card compatibility.

The performance of PVCAM on the Mac is currently restricted due to a driver limitation – the frame rate achieved will be approximately half the expected rate. Photometrics intend to fix this in a future driver release.

On Windows, run RSConfig.exe before running Volocity for the first time.

Evolve 512

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not Supported				http://www.photometrics.com/support/downloads/
	Intel	Not supported				
Windows	XP Pro	Full	5.5	SP3	PVCAM 2.7.10 or higher	
	XP x64	Full	5.5	SP2	PVCAM 2.7.10 or higher	
	Windows 7 Pro 32 bit	Full	5.5		PVCAM 2.7.10 or higher	
	Windows 7 Pro 64 bit	Full	5.5		PVCAM 2.7.10 or higher	

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

In recent updates, Microsoft released two hotfixes which updated their FireWire stack file. However, these updates cause performance drops in the functionality of Texas Instruments (TI) FireWire Controllers which ship with Photometrics cameras. Installing the Thesycon 1394 stack fixes these problems by replacing the default Microsoft stack. This remedies any problems caused by the updates.

The Thesycon stack installer is available to download from:

http://www.photometrics.com/support/downloads/

On systems on which other devices are connected via IEEE 1394 ports a separate IEEE1394 card will be required for each device. The Thesycon TI1394bus Setup Wizard will allow installation of the Thesycon stack on only the card to which the Photometrics camera is connected. Installation of driver updates for the other IEEE1394 devices can result in the removal of the Thesycon stack. Should this happen, the Thesycon stack can be re-installed using the Thesycon TI1394bus Setup Wizard.

Quant EM:512SC

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported				http://www.photomet.com/
	Intel	Not supported				
Windows	XP Pro	Full	5.0.3	SP3	PVCAM 2.7.7 or higher	
	XP x64	Full	5.3	SP2	PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 32 bit	Full	5.3		PVCAM 2.7.9.1 or higher	
	Windows 7 Pro 64 bit	Full	5.3		PVCAM 2.7.9.1 or higher	

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

Cameras on which serial number digits 5 through 7 are 100 do not support binning. Binning is supported on cameras on which these digits are >100.

Run RSConfig.exe before running Volocity for the first time.

Physik Instrumente (PI)

PIFOC Focus System

Description		Piezo focus drive				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6	SP3	No drivers required	
	XP x64	Full	3.6	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Not Supported	5.2		No drivers required	

The piezo focus system controls the movement of a single objective and is compatible with Zeiss, Olympus and Leica microscopes. The piezo focus system is not compatible with DIC optics on the Zeiss Axioskop 2 FS. The quality of DIC imaging with many other microscopes may also be impaired.

A suitable LVPZT piezo position controller such as the E-665.XR LVPZT will be required to drive the head. Any controller/head combination with a 0-10V input range and 100µm travel will be suitable.

An Improvision Acquisition Hub controller is required to drive the LVPZT controller. The 0-10V input on the controller must be connected to the “Piezo Z” output on the Acquisition Hub.

Prior

Lumen LED

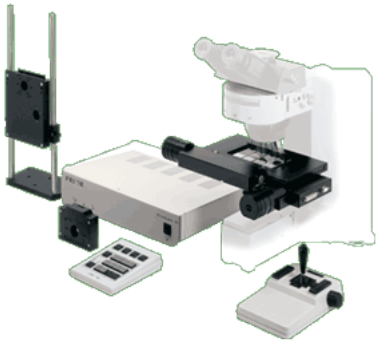
Description		Multi-wavelength LED illumination device				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	6.1	10.5.8	No drivers required	No drivers required
	Intel	Full	6.1	10.5.8	No drivers required	
Windows	XP Pro	Full	6.1	SP3	No drivers required	
	XP x64	Full	6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	6.1		No drivers required	
	Windows 7 Pro 64 bit	Full	6.1		No drivers required	

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

When selecting a serial port in the preferences please select the "Proscan/Orbit" device for the lumen LED.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

ProScan Controller



Description		XY, focus, filter and shutter controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.3	10.5.8	No drivers required	No drivers required
	Intel	Full	5.3	10.5.8	No drivers required	
Windows	XP Pro	Full	5.3	SP3	No drivers required	
	XP x64	Full	5.3	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.3		No drivers required	
	Windows 7 Pro 64 bit	Full	5.3		No drivers required	

The ProScan is a microscope automation controller. Volocity supports the following devices:

- Filter wheels
- Focus drives
- Shutters
- XY Stages
- 4 digital TTL inputs
- 4 digital TTL outputs

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

QImaging

EXi Blue

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported				http://www.qimaging.com/
	Intel	Not supported				
Windows	XP Pro	Full	5.4.2	SP3	2.0.9.5 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394b (FireWire 800) port. A spare IEEE 1394b port is required for connection. If a spare port is not available, an IEEE 1394b PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394b.

Intensified Retiga

Description		Digital monochrome camera with image intensifier				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

MicroPublisher 3.3

Description		Digital color camera with Bayer mask				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

MicroPublisher 5.0

Description		Digital color camera with Bayer mask				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

QICAM Fast 1394

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

QIClick

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.4	10.3.9	2.0.6 or higher	http://www.qimaging.com/
	Intel	Deprecated*	5.4	10.4.7	2.0.6 or higher	
Windows	XP Pro	Full	5.4	SP3	2.0.8 or higher	
	XP x64	Full	5.4	SP2	2.0.8 or higher	
	Windows 7 Pro 32 bit	Full			2.0.8 or higher	
	Windows 7 Pro 64 bit	Full			2.0.8 or higher	

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

Retiga 2000R

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

Retiga 4000R

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

Retiga EXi

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

Retiga EXi "Fast 1394"

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

Retiga SRV

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

Rolera MGi

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not supported				http://www.qimaging.com/
	Intel	Deprecated*				
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

Rolera XR Fast 1394

Description		Digital monochrome camera				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Deprecated*	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This camera connects to the computer via an IEEE 1394 (FireWire 400) port. A spare IEEE 1394 port is required for connection. If a spare port is not available, an IEEE 1394 PCI card can be added to most systems. See Appendix B for more detailed information on IEEE 1394.

* Support is deprecated because drivers are not available for Mac OS 10.6.X or higher

RGB-HM-S

Description		RGB filter				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	2.0.0 or higher	http://www.qimaging.com/
	Intel	Full	4.0	10.4.7	2.0.0 or higher	
Windows	XP Pro	Full	4.0	SP3	1.90.1 or higher	
	XP x64	Full	4.0	SP2	1.90.1 or higher	
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

This device has been tested by Improvision with the Retiga EXi “Fast 1394” but should work with all compatible QImaging monochrome cameras.

Qioptiq

OptiGrid (manual focussing)

Description		Grid confocal solution				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	Included in Volocity installer	http://www.cellularimaging.com/downloads/
	Intel	Full	4.0	10.4.7	Included in Volocity installer	
Windows	XP Pro	Full	3.5	SP3	Improvision Hardware Drivers 2.2	
	XP x64	Full	3.5	SP2	Improvision Hardware Drivers 2.2	
	Windows 7 Pro 32 bit	Full	5.2		Improvision Hardware Drivers 2.4	
	Windows 7 Pro 64 bit	Full	5.2		Improvision Hardware Drivers 2.4	

Improvision has tested the following microscopes and recommends them for use with the OptiGrid:

- Leica DMIRE2 (internal modification)
- Zeiss Axiovert 200 (paddle)
- Zeiss Axiovert 200M (paddle)
- Nikon TE2000 (paddle)
- Olympus IX81 (paddle)

Improvision has tested the following microscopes but does not recommend them for use with the OptiGrid:

- Leica DMRXA2 (internal modification)

Qioptiq has tested the following microscopes with the OptiGrid:

- Zeiss Axioplan 2ie (serial numbers from 35 11 000001; from 35 10 000001; from 35 02 000001) (paddle)
- Olympus BX61 (paddle)
- Nikon E800 (paddle)

- Nikon E1000 (paddle)

Different microscopes require different paddle designs. Some microscopes may require internal modification.

An Improvision Acquisition Hub controller is required to drive the Optigrid controller for the manually focusing grid.

A free USB port will be required to connect the Acquisition Hub controller.

OptiGrid (motorized focus)

Description		Grid confocal solution				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.1	10.3.9	Included in Volocity installer	Included in Volocity installer
	Intel	Full	4.1	10.4.7	Included in Volocity installer	
Windows	XP Pro	Full	4.1	SP3	Included in Volocity installer	
	XP x64	Full	4.1	SP2	Included in Volocity installer	
	Windows 7 Pro 32 bit	Full	5.2		Included in Volocity installer	
	Windows 7 Pro 64 bit	Full	5.2		Included in Volocity installer	

Improvision has tested the following microscopes and recommends them for use with the OptiGrid:

- Leica DMIRE2 (internal modification)
- Zeiss Axiovert 200 (paddle)
- Zeiss Axiovert 200M (paddle)
- Nikon TE2000 (paddle)
- Olympus IX81 (paddle)

Improvision has tested the following microscopes but does not recommend them for use with the OptiGrid:

- Leica DMRXA2 (internal modification)

Qioptiq has tested the following microscopes with the OptiGrid:

- Zeiss Axioplan 2ie (serial numbers from 35 11 000001; from 35 10 000001; from 35 02 000001) (paddle)
- Olympus BX61 (paddle)
- Nikon E800 (paddle)
- Nikon E1000 (paddle)

Different microscopes require different paddle designs. Some microscopes may require internal modification.

A free USB port will be required to connect the Optigrid controller.

Richardson Technologies

RTM

Description		Real-time microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Deprecated*	3.0.2	10.3.9	snapper.pkg on the Volocity CD	Volocity CD
	Intel	Not supported				
Windows	XP Pro	Deprecated*	3.0.2	SP3	Snapper Drivers on the Volocity CD	
	XP x64	Not supported				
	Windows 7 Pro 32 bit	Not supported				
	Windows 7 Pro 64 bit	Not supported				

*Support for this device can no longer be confirmed in versions after Volocity 6.2.The manufacturer is no longer in business and microscopes are not available.

Serial cables are required to connect the camera and shutter to serial ports on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cables must be the manufacturer's own cables. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

A 5V PCI slot is required for the Active Imaging Snapper-24 card. Note: This card will not work in a G5 Macintosh.

Sutter

DG-4 Filter Changer

Description		High-speed filter changer				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

DG-5 Filter Changer

Description		High-speed filter changer				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.3	10.3.9	No drivers required	No drivers required
	Intel	Full	4.3	10.4.7	No drivers required	
Windows	XP Pro	Full	4.3	SP3	No drivers required	
	XP x64	Full	4.3	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

Lambda 10-2 Filter Changer

Description		Filter and shutter controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6	SP3	No drivers required	
	XP x64	Full	3.6	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

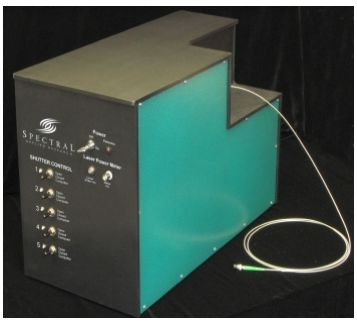
Up to two filter wheels and two shutters are supported. The speed of the wheels must be set in the “Device Options” dialog for each wheel – using an incorrect speed can cause the wheels to stall. If the wheel position is changed from the keypad on the controller, Volocity will not reflect the change and may take some time to subsequently change the wheel. This is due to a limitation in the Sutter command set.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer’s own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

Spectral Applied Research

LMM-5



Description		Laser Merge Module				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.0	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	4.0	SP3	No drivers required	
	XP x64	Full	4.0	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

A free USB port is required to connect the controller to the host computer.

Vincent Associates

Uniblitz VMM-D1

Description		Single channel shutter controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.4	10.3.9	No drivers required	No drivers required
	Intel	Full	4.4	10.4.7	No drivers required	
Windows	XP Pro	Full	4.4	SP3	No drivers required	
	XP x64	Full	4.4	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

A serial cable (male to female cross over) is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

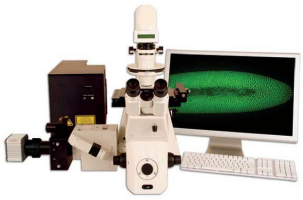
Uniblitz VMM-D3

Description		Three channel shutter controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.0.3	10.3.9	No drivers required	No drivers required
	Intel	Full	5.0.3	10.4.7	No drivers required	
Windows	XP Pro	Full	5.0.3	SP3	No drivers required	
	XP x64	Full	5.0.3	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

A serial cable (male to female cross over) is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

Yokogawa

CSU10



Description		Confocal scanner unit				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	3.6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

CSU22

Description		Confocal scanner unit				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	3.6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Control of the excitation, dichroic, and emission filters is supported; all three are controlled together by a single device. Disc speed can be switched between “Normal” (2500 r.p.m.) and “High” (5000 r.p.m.). These speeds have been selected because they generate convenient confocal scan times, 2 and 1 ms respectively. When you start Volocity the CSU 22 shutter will be opened and the N.D. filter will be set to 100% transmission.

A serial cable is required to connect the controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer’s own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

Zeiss

AxioImager

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.5	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.5	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Transmitted Light Shutter
- Fluorescence filter turret
- Focus drive
- Objective turret
- Light path
- Contrast modes
- XY stage

Features may vary between microscope models.

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

AxioObserver

Description		Electronic inverted microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	5.2	10.4.7	No drivers required	No drivers required
	Intel	Full	5.2	10.4.7	No drivers required	
Windows	XP Pro	Full	5.2	SP3	No drivers required	
	XP x64	Full	5.2	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Uniblitz shutter
- TL shutter
- Fluorescence filter turret
- Focus drive
- Objective turret
- Contrast modes
- Definite Focus

Features may vary between microscope models.

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

Zeiss Axioplan 2

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	3.6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Focus drive
- Objective turret

Features may vary between microscope models.

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

Axioplan 2 Imaging

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.6.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.6.1	SP3	No drivers required	
	XP x64	Full	3.6.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Focus drive
- Objective turret

Features may vary between microscope models.

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

Axioplan 2ie

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Focus drive
- Objective turret

Features may vary between microscope models.

These firmware versions or better are required:

- Axioplan 2ie firmware 2.12 BIOS 4.08
- Focus drive firmware ZM_V2.03 stepsize 25nm

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

Axioskop 2 MOT Plus

Description		Electronic upright microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.1	10.4.7	No drivers required	
Windows	XP Pro	Full	4.1	SP3	No drivers required	
	XP x64	Full	4.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Focus drive
- Objective turret

Features may vary between microscope models.

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

Axiovert 200M

Description		Electronic inverted microscope				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.0.2	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.0.2	SP3	No drivers required	
	XP x64	Full	3.5	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Supported electronic features include:

- Fluorescence shutter
- Fluorescence filter turret
- Focus drive
- Objective turret
- Transmitted light shutter
- Transmitted light voltage

Features may vary between microscope models.

These firmware versions or better are required:

- Zeiss Axiovert 200M Firmware 1.13 BIOS 4.08
- Focus drive firmware ZM_V2.03

A serial cable is required to connect the microscope to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the microscope has a male DB-9 socket).

MCU-28 X-Y Stage

Description		X-Y stage controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	3.7	10.3.9	No drivers required	No drivers required
	Intel	Full	4.0	10.4.7	No drivers required	
Windows	XP Pro	Full	3.7	SP3	No drivers required	
	XP x64	Full	3.7	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

If the MCU-28 is used with an electronic microscope, it should be connected to the CAN-Bus on the microscope.

If the MCU-28 is used without an electronic microscope, it should be connected directly to a serial port.

A serial cable may be required to connect the stage controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the controller has a male DB-9 socket).

MCU-2008 X-Y Stage

Description		X-Y stage controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Not Supported				No drivers required
	Intel	Full	5.5.1	10.6.6	No drivers required	
Windows	XP Pro	Full	5.5.1	SP3	No drivers required	
	XP x64	Full	5.5.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.5.1		No drivers required	
	Windows 7 Pro 64 bit	Full	5.5.1		No drivers required	

The MCU-2008 should be connected to the CAN-Bus on the microscope.

Zeiss WSB05 Piezodrive

Description		X-Y stage controller				
Platform		Support Level	Minimum Volocity version	Minimum OS version	Minimum Driver version	Driver URL
Mac OS	Power PC	Full	4.1	10.3.9	No drivers required	No drivers required
	Intel	Full	4.1	10.4.7	No drivers required	
Windows	XP Pro	Full	4.1	SP3	No drivers required	
	XP x64	Full	4.1	SP2	No drivers required	
	Windows 7 Pro 32 bit	Full	5.2		No drivers required	
	Windows 7 Pro 64 bit	Full	5.2		No drivers required	

Zeiss part number: 432901-0000-000

Compatible with Scanning Stage 225 x 85 Piezo for upright stand (423023-0000-000) and Scanning Stage 130 x 85 for upright stand (432022-0000-000).

A serial cable is required to connect the stage controller to a serial port on the computer. For computers that do not have built-in serial ports, a USB to serial adapter will be required.

The cable must be the manufacturer's own cable. Macintosh computers will need an Easy Sync UC232-R10 or similar PC-style serial adapter that has DB-9 connectors rather than mini-DIN.

The cable is a crossover type terminated with a female DB-9 plug at the microscope end (the controller has a male DB-9 socket).

Appendix A: PCI and PCI Express Cards

Some devices require an expansion card to connect to the computer. This section discusses the different types of cards that are available, the different types of slots that are available in the computer, and which card is compatible with which slot.

PCI

PCI is the oldest and most common type of expansion slot. It is available in two variants – 5 V and 3.3 V. 5 V PCI cards will only work in a 5 V slot, 3.3 V PCI cards will only work in a 3.3 V slot and universal PCI cards will work in either. The cards are "keyed" which means that it is not possible to fit a card into a slot that uses the wrong voltage.

PCI-X

PCI-X is a revision to PCI that runs at much higher speed. PCI-X is backwards compatible with PCI, PCI cards will fit into PCI-X slots. The same voltage rules that apply to PCI also apply to PCI-X.

PCI-X is most commonly found on PC workstations, G4 and older G5 Macs.

PCI Express (PCIe)

PCIe is a replacement for PCI and PCI-X that uses a completely different electrical design. It offers much higher speeds and physically smaller connectors. PCIe is not backwards compatible with PCI – PCI and PCI-X cards will not work in PCIe slots.

PCIe is found on most new PCs, late-model G5 Macs and new Macs such as the Mac Pro. The most common arrangement is to have one 16x slot for the graphics card and then one or more 1x slots for expansion cards. Most cards used for cameras are 1x cards (these provide more than enough bandwidth).

It is expected that PCIe will completely replace PCI and PCI-X over the next few years.

Compatibility

This table shows what cards are compatible with each slot type. Note that electrical compatibility may not mean that the card will work – it is important to check that drivers are available for the operating system that will be used.

		Slot Type							
		PCI 5 V	PCI 3.3 V	PCI-X 5 V	PCI-X 3.3 V	PCIe 1x	PCIe 4x	PCIe 8x	PCIe 16x
Card Type	PCI 5 V	√		√					
	PCI 3.3 V		√		√				
	PCI Universal	√	√	√	√				
	PCI-X 5 V			√					
	PCI-X 3.3 V				√				
	PCI-X Universal			√	√				
	PCIe 1x					√	√	√	√
	PCIe 4x						√	√	√
	PCIe 8x							√	√
	PCIe 16x								√

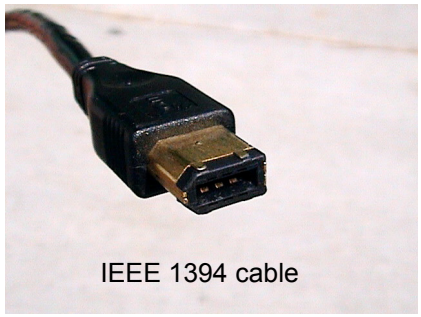
Appendix B: IEEE 1394 (FireWire)

Some devices require an IEEE 1394 (FireWire) port to connect to the computer. This section discusses the different IEEE 1394 standards and compatibility issues.

IEEE 1394 (FireWire 400)

IEEE 1394 (FireWire 400) refers to an interface standard capable of data transfer rates of up to 400 Mbits/s.

IEEE 1394 port



IEEE 1394 cable

Only IEEE 1394 devices can be connected through IEEE 1394 ports.

IEEE 1394 expansion cards are widely available for most systems.

IEEE 1394b (FireWire 800)

IEEE 1394b (FireWire 800) refers to an interface standard capable of data transfer rates of up to 800 Mbits/s.

IEEE 1394b port

IEEE 1394b cable

IEEE 1394b expansion cards are widely available for most systems.

IEEE 1394b ports can be used to connect IEEE 1394b devices (directly) or IEEE 1394 (FireWire 400) devices via a low cost adaptor or an IEEE 1394b to IEEE 1394 cable.

IEEE 1394b to IEEE 1394 adaptor

IEEE 1394b to IEEE 1394 cable